

Antarctodius rauscherti, a new species (Crustacea: Amphipoda: Ochlesidae) from the Antarctic Ocean

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Abstract.—The Antarctic amphipod crustacean *Antarctodius rauscherti*, new species, is described. This species can be distinguished from its hypothetical sister taxon, *Antarctodius antarcticus*, by its elongate peduncles of the antenna 1 and 2, pointed apical processes on peduncle articles 1 and 2 of antenna 1, the shortened and strongly flexed rostrum and the truncate apices of coxa 2 and 3, and the lack of a dorsal hump on pleonite 3.

During cruise 48 (ANT XV/3) of R/V Polarstern to the Weddell Sea in 1998, large numbers of crustaceans were collected by Dr. Martin Rauschert. In one of these samples was an interesting amphipod that had not appeared in previous benthic collections from this region. It proved to be new to science and is described in detail herein. It was placed in the genus *Antarctodius*, erected only recently by Berge et al. (1999). They provided a cladistic analysis of the Ochlesidae Stebbing, 1910 and Odiidae Coleman & Barnard, 1991a. They concluded the Odiidae was paraphyletic and placed this family within the Ochlesidae. In addition, they considered the genus *Antarctodius* to be plesiomorphic within the family.

Materials and Methods

The animals were fixed in 70% ethanol, transferred into glycerol for the study and drawn with a camera lucida on a Leica Wild M8 dissecting microscope. The holotype was dissected. Appendages and mouthparts were transferred onto slides and mounted in Euparal (Roth). Details were drawn under a Leica DMLB light microscope using a camera lucida.

The type material of the new species is deposited in the Museum für Naturkunde in Berlin.

Antarctodius Berge et al., 1999
Antarctodius rauscherti, new species
Figs. 1-5

Material examined.—Holotype ovigerous female, 5.7 mm; 2 paratypes, sex unknown, 3.9 and 4.7 mm; ZMB 27 309, Präp. No. 4607.

Type locality.—Polarstern station 48/115, 73°37.0'S 22°24.9'W, 6 Feb 1998, depth 756 m, dredge, 1 mm mesh size, donor M. Rauschert.

Description of holotype.—Cuticle relatively soft, pitted. Head slightly telescoped into pereonite 1; eyes apparently not present or if so pigments washed out in alcohol; rostrum strongly flexed and shortened, not surpassing half length of peduncular article 1 of antenna 1.

Pereonite 1 and 3 subequal in length (Fig. 1a); pereonite 2 shortest and pereonites 6 and 7 longest; pleonites subequal in length to pereonite 7. Pereon and pleon with keel, on pleon segment 3 shallow keel only anteriorly, posterior dorsal surface rounded. Epimera 1-3 posteroventral corner pointed, posterolateral margin lobate and rounded on pleonites 1 and 2, pointed on 3 (Fig. 1a). Posterodorsal hump on pleonite 3 absent. Urosomite 1 smooth, subequal in length to urosomites 2 and 3 combined; urosomite 2 shortest, dorsally round-

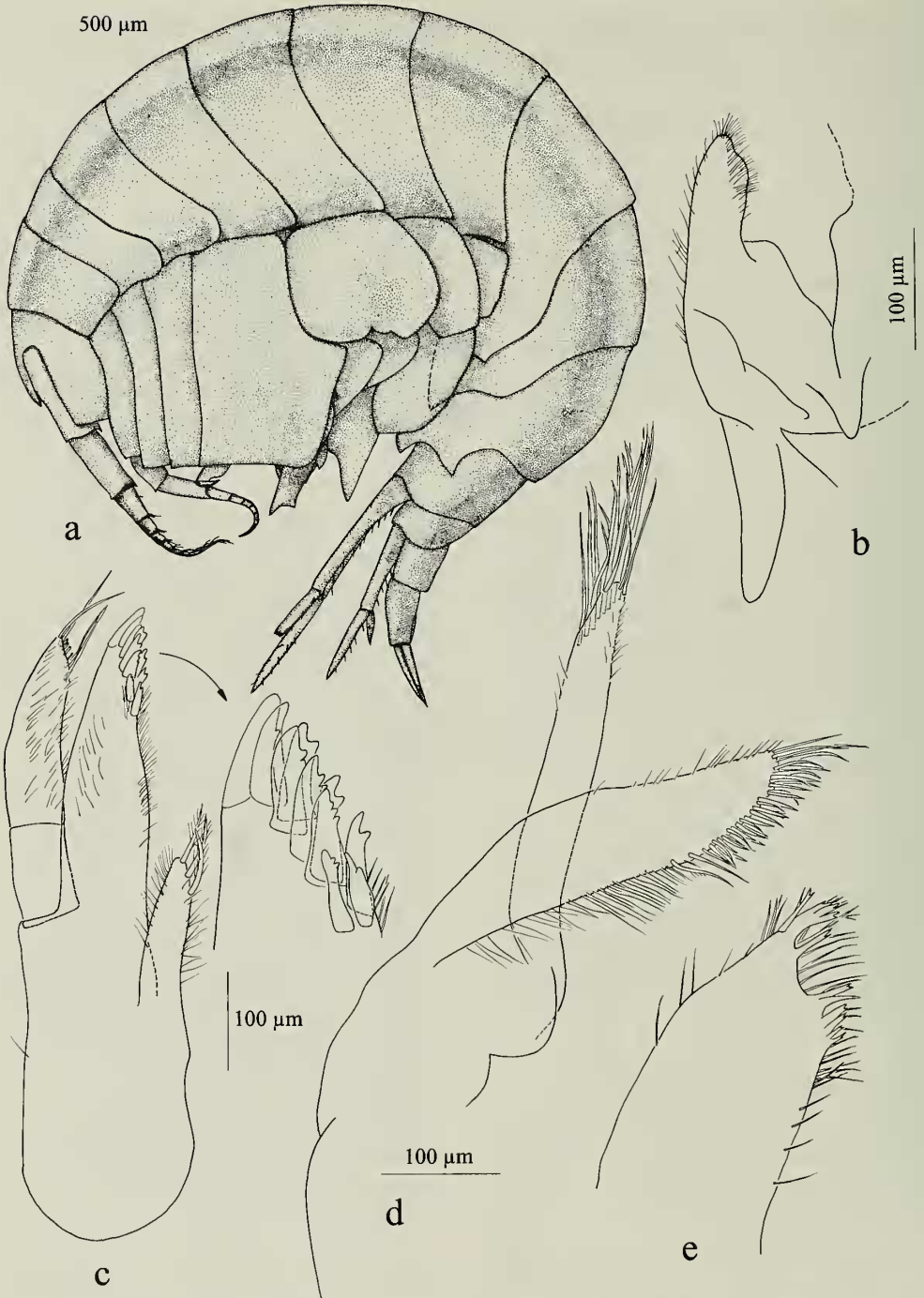


Fig. 1. *Antarcticodius rauscherti*, new species, holotype ovigerous female, 5.7 mm. A, habitus, left side; b, lower lip, slightly damaged; c, maxilla 1; d, maxilla 2, plates twisted; e, apex of lower lip (hypopharynx).

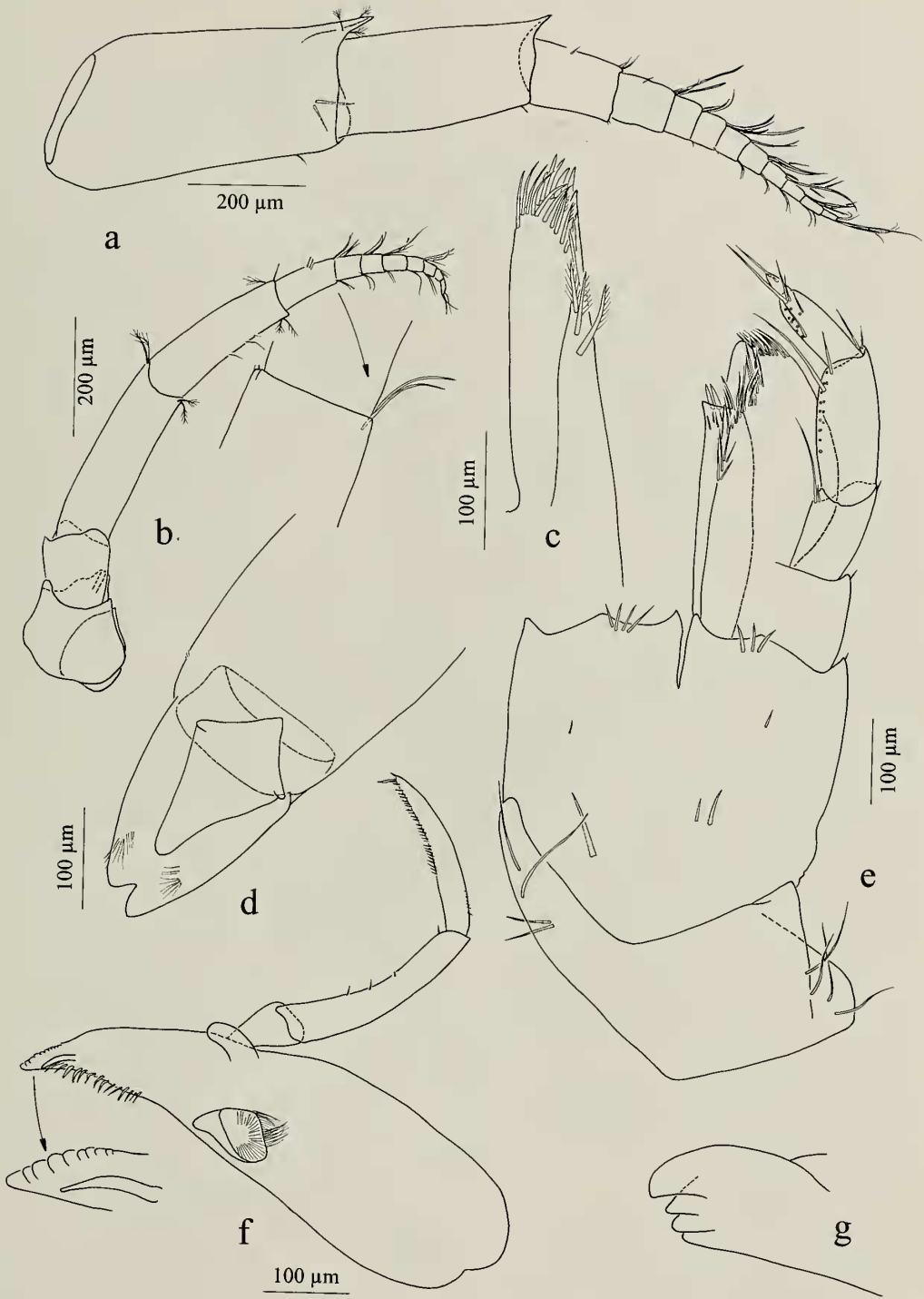


Fig. 2. *Antarctodius rauscherti*, new species, holotype ovigerous female, 5.7 mm. A, antenna 1; b, antenna 2; c, inner and outer plate of maxilliped; d, upper lip (labrum); e, maxillipeds, posterior aspect, right side plates and palp omitted; f, left mandible; g, right lacinia mobilis.

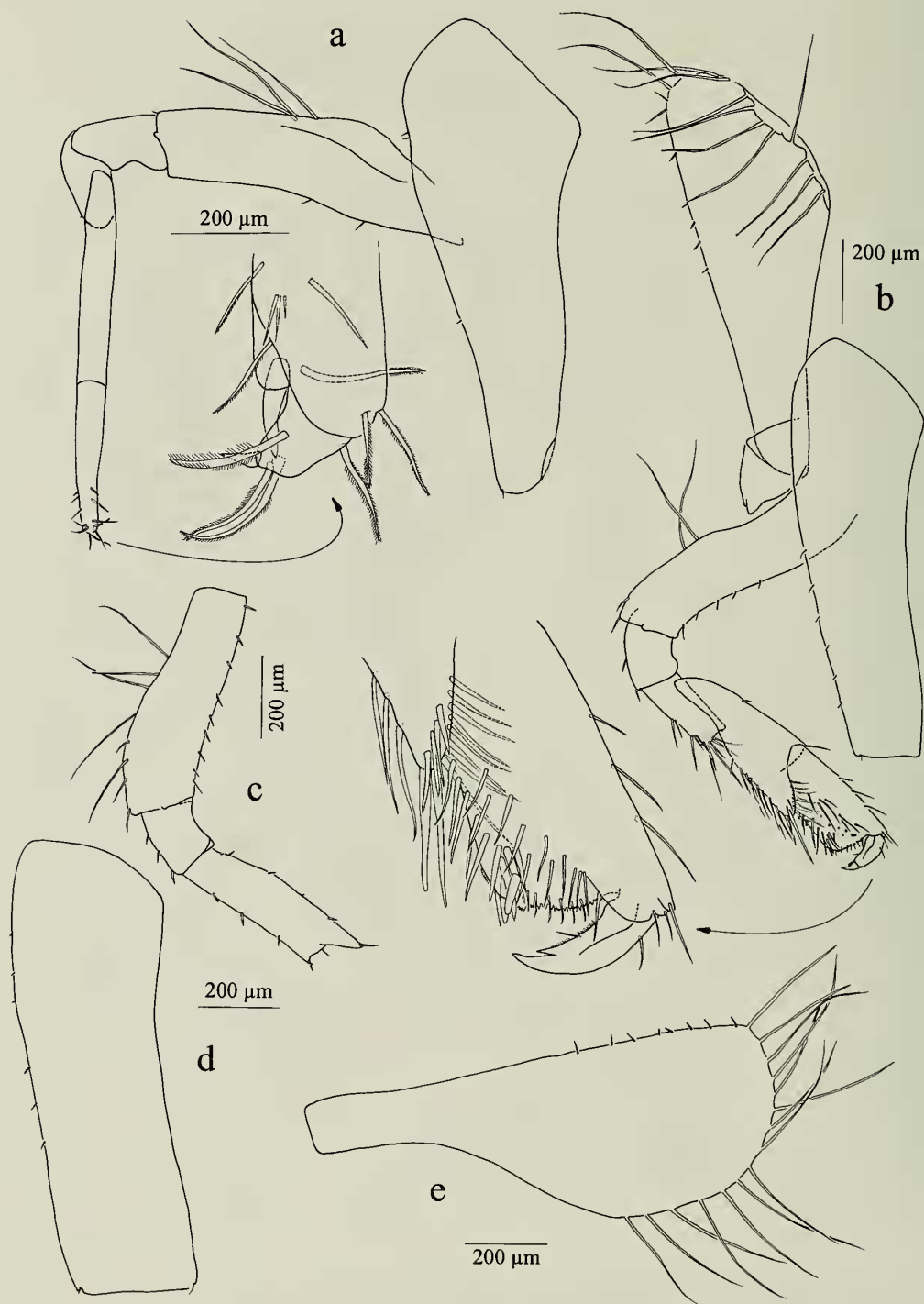


Fig. 3. *Antarctodius rauscheri*, new species, holotype ovigerous female, 5.7 mm. A, pereopod (gnathopod) 1, detail shows chela; b, pereopod (gnathopod) 2, detail shows chela; c, basis, ischium and merus of pereopod 3; d, coxa of pereopod 3; e, oostegite of pereopod 3.

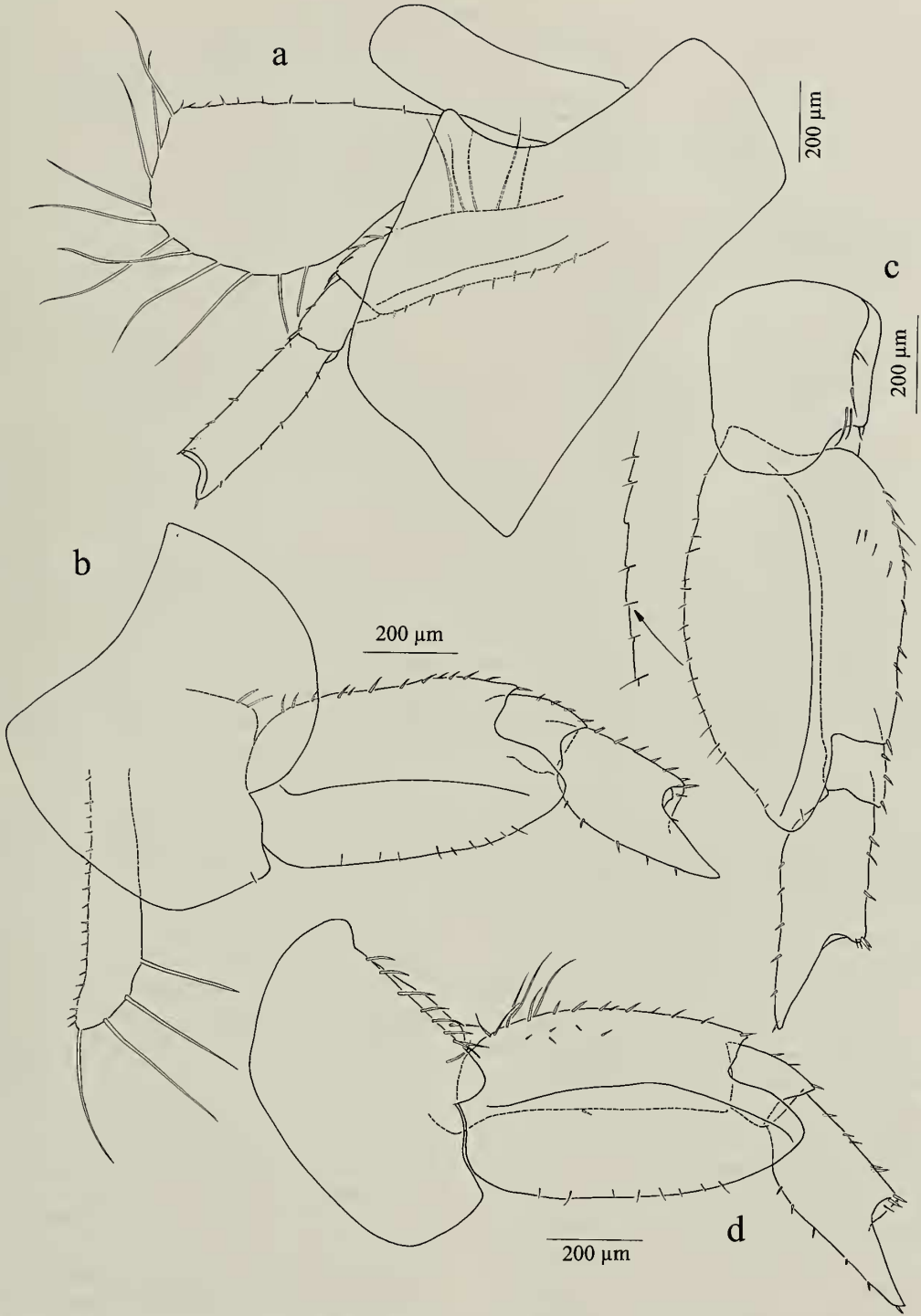


Fig. 4. *Antarctodius rauscheri*, new species, holotype ovigerous female, 5.7 mm, appendages, carpus, propodus and dactylus missing. a, pereopod 4; b, pereopod 5; c, pereopod 7; d, pereopod 6.

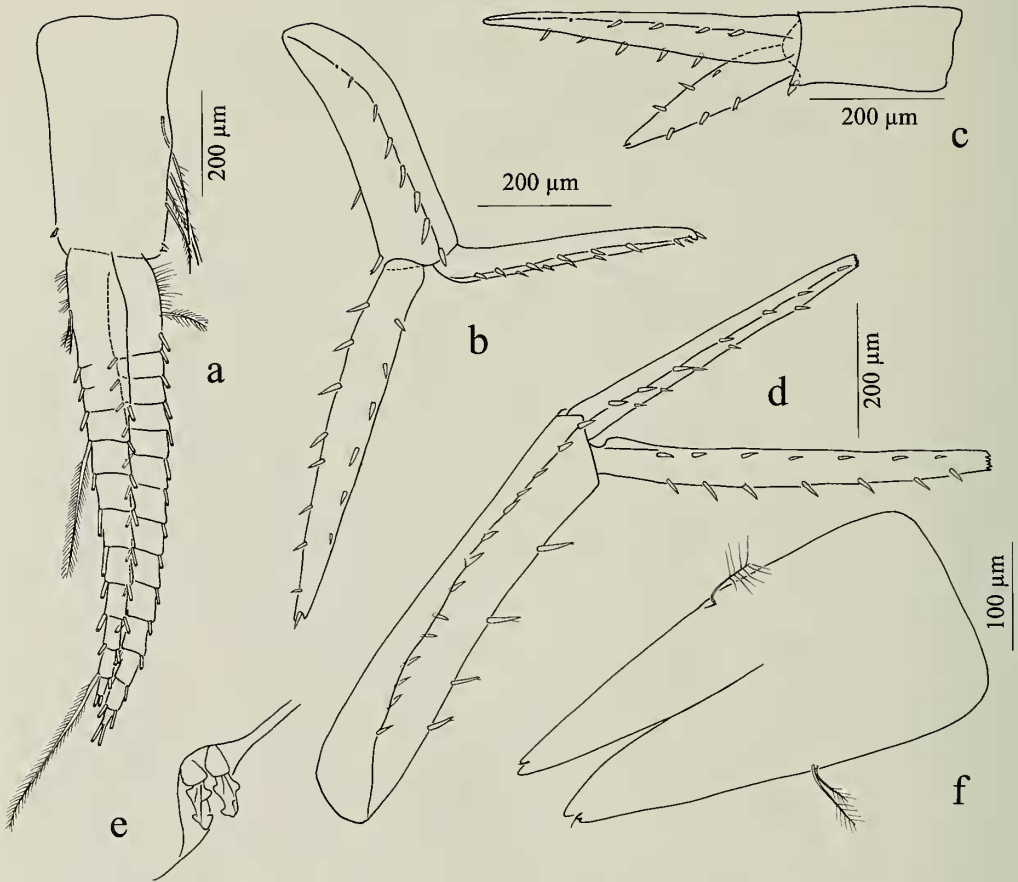


Fig. 5. *Antarctodius rauscheri*, new species, holotype ovigerous female, 5.7 mm. a, pleopod 1, setae partly omitted; b, uropod 2; c, uropod 3; d, uropod 1, apices of rami damaged; e, coupling hooks of pleopod; f, telson.

ed; urosomite 3 with laterodorsal ridge-like elevations.

Antenna 1 (Fig. 1a, 2a): peduncle article 1 slightly surpassing ventral margin of head, subequal to 2 and 3 combined, posteroventromedial angle acutely produced, article 3 with inconspicuous indication of point, flagellum 9-articulate, each equipped with long aesthetascs.

Antenna 2 (Fig. 2b): peduncle articles 1–3 about the length of article 4, article 5 subequal in length to article 4; flagellum 8-articulate.

Upper lip (labrum) (Fig. 2d) longer than wide, strongly tapering distally and clearly notched apically, apex of right side slightly shortened.

Mandible (Fig. 2f): mandibular body

slender with pointed apex; incisor with denticles; lacinia mobilis on left side slender, spine-like, strongly developed and dentate on right side (Fig. 2g); spine row present; pars molaris produced; palp 3-articulate, inserted at molar level, article 3 with row of short setae and slightly longer apical setae.

Lower lip (hypopharynx) (Fig. 1b, e): lobes narrow, oblique apically and with shallow depression apicomediaally and deep excavations medially; mandibular processes narrow, long and rounded.

Maxilla 1 (Fig. 1c): outer plate elongate, pointed, with oblique margin bearing stout serrate, spine-like setae on medial margin; palp 2-articulate, reaching to distal end of outer plate; inner plate short,

Table 1.—Comparison of *Antarctodius antarcticus* and *Antarctodius rauscherti*, new species.

Characters	<i>A. antarcticus</i> , female 5 mm	<i>A. rauscherti</i> , new species, holotype female 5.7 mm
Cuticle	strongly sclerotized, not transparent	soft and transparent
Rostrum	surpassing ventral margin of head, rather straight and stout	strongly shortened and flexed
Peduncle of antenna 1	bulky, article 3 not surpassing apex of coxa 1; stout with straight apical margins	elongate, article 2 surpassing apex of coxa 1; pointed postero-distomedial acute processes on articles 1–2
Peduncle article 4 of antenna 2	length 1.6 × breadth	length 3 × breadth
Peduncle article 5 of antenna 2	length 1.5 × breadth	length 3.5 × breadth
Apex of coxa 2 and 3	truncate with anterior and posterior angles rounded	truncate with anterior and poster angles angular
Coxa 5	strongly produced laterally	not strongly produced laterally
Pleonite 3	with dorsal hump posteriorly	smooth
Dorsal surface of urosomite 2	with lateral ridge-like elevations	smooth

extending beyond insertion of palp on outer plate, with 3 apical setae.

Maxilla 2 (Fig. 1d): outer plate tapering distally, about same length as inner plate, but wider, with long setae on oblique medioapical margin; inner plate with rounded apex and shorter setae apicomediaally.

Maxilliped (Fig. 2c, e): basis and outer plate about subequal in length; inner plate narrow with distomedial angle produced; outer plate relatively wide, rounded apically, longer than distal margin of article 2 of palp; palp 4-articulate, somewhat longer than outer plate; article 1 short; article 2 subrectangular with long setae on medial margin; article 3 narrow, about half the width of article 2 with long slender setae medioapically.

Pereopod (gnathopod) 1 (Fig. 3a): coxa shorter than that of pereopod 2, tapering distally, anterior margin concave, posterior margin rather straight; basis expanded proximoposteriorly, with some long setae on posterior margin; ischium subequal in length to merus; carpus elongate; propodus 73% of carpus length; propodus process of chela substituted by stout spine, dactylus bulky, with spine apically (detail of Fig. 3a).

Pereopod (gnathopod) 2 (Fig. 3b): coxa

concave anteromarginally, truncate apically; basis weakly sinuous in shape; ischium shortest; merus angular posterodistally; carpus lobe less than half the length of propodus; propodus weakly expanded distally, with serrate palm; dactylus stout with pointed process on inner margin (detail of Fig. 3b).

Pereopod 3 (Fig. 3c, d, e): coxa excavate anteromarginally, with truncate angular apex, subequal to that of pereopod 2; basis strongly expanded posteromarginally; ischium anteromarginally slightly excavate; merus anterodistally acutely prolonged; carpus, propodus and dactylus missing.

Pereopod 4 (Fig. 4a): coxa straight anteromarginally, slightly angularly produced anterodistally, ventral margin truncate, posteroventral angle rounded, posterior margin drawn out into a long pointed process; ischium with anteromarginal excavation; merus not much expanded, anterodistal angle drawn out a little subacutely, carpus, propodus and dactylus missing.

Pereopod 5 (Fig. 4b): coxa not strongly produced laterally, wider than long, posteriorly angular and subacute, anterior lobe rounded; basis both margins weakly convex, produced into rounded lobe posteroventrally; ischium pointed anterodistally;

merus expanded distally with long acute extension posterodistally; carpus to dactylus missing.

Pereopod 6 (Fig. 4d): coxa longer than wide, anteriorly oblique with row of setae, posteriorly rather rounded; basis longer than wide, both margins convex, posteroventral margin lobe-like; ischium pointed anterodistally; merus expanded distally with long lobe-like acute extension posterodistally; carpus to dactylus missing.

Pereopod 7 (Fig. 4c): coxa smallest; basis wide, posterior margin clearly convex, posteroventral margin lobe-like; ischium shortest, less than $\frac{1}{3}$ of basis width; merus expanded distally with long lobe-like acute extension posterodistally; carpus, propodus and dactylus missing.

Pleopod 1 (Fig. 5a): as in the family; inner ramus slightly shortened; coupling hooks harpoon-like (Fig. 5e).

Uropod 1 (Fig. 5d): rami subequal in length, tips broken.

Uropod 2 (Fig. 5b): peduncle shorter than inner ramus; outer ramus shorter than inner, rami each with a terminal spine, both margins spinose.

Uropod 3 (Fig. 5c): peduncle short; outer ramus shorter than inner, both rami spinose.

Telson (Fig. 5f) elongate, longer than distal margin of peduncle of uropod 3, tapering distally, cleft 55% of length, with 2 pairs of long slender dorsal facial setae.

Etymology.—The species is dedicated to our dear colleague Dr. Martin Rauschert, who collected these animals.

Discussion.—The new species is similar to *Antarctodius antarcticus* (Watling & Holman, 1981), the only other ochlesid spe-

cies from the high Antarctic. Only one other southern cold water species of the family Ochlesidae, *Curidea magellanica* Coleman & Barnard, 1991b, is known from the Magellanic region.

In the original description of *A. antarcticus* the palp of maxilla 1 is described as 1-articulate. In *A. rauscherti*, new species it has the same length, but without doubt is 2-articulate. The authors checked this character on *A. antarcticus* specimens from the collection of the Museum für Naturkunde Berlin and found out that also this species has a 2-articulate maxillary palp.

Table 1 compares the two species of the genus *Antarctodius*.

Acknowledgements

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